

What is claimed is:

1. A hardened voyage data recorder, comprising:

(a) a removable memory subsystem;

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(b) a mounting base subsystem removably coupled to  
said memory subsystem; and

10 (c) electronic circuits for electronically  
accessing said memory subsystem, wherein said  
electronic circuits provide an ETHERNET access  
port for coupling said hardened voyage recorder  
to an ETHERNET network.

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2. A hardened voyage data recorder according to claim 1  
wherein said electronic circuits include firmware which  
provides TCP/IP access over ETHERNET to said circuits.

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3. A hardened voyage data recorder according to claim 2  
wherein said firmware includes web pages for configuring  
said hardened voyage data recorder.

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4. A hardened voyage data recorder according to claim 1  
wherein said electronic circuits are located in said  
mounting base subsystem.

5. A hardened voyage data recorder according to claim 1 wherein said mounting base subsystem includes at least one watertight cable connector.

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6. A hardened voyage data recorder according to claim 1 wherein said mounting base subsystem includes a first watertight cable connector for coupling with a power supply and a second cable connector for coupling with an ETHERNET network.

7. A hardened voyage data recorder according to claim 1 wherein said electronic circuits accept both 110/220 VAC and 24 VDC power supplies.

8. A hardened voyage data recorder according to claim 1 further comprising a quick release V-clamp, wherein said removable memory subsystem has a lower flange, said mounting base subsystem has an upper flange, and said quick release V-clamp engages said upper flange and said lower flange whereby said memory subsystem and said base subsystem are removably coupled to each other.

9. A hardened voyage data recorder according to claim 8  
wherein said quick release V-clamp has two quick release  
5 levers.

10. A hardened voyage data recorder according to claim 1  
wherein said removable memory subsystem includes non-  
10 volatile memory enclosed within a boiler.

11. A hardened voyage data recorder, comprising:

15 (a) a removable memory subsystem having a lower  
flange;

(b) a mounting base subsystem having an upper  
flange; and

20 (c) a quick release V-clamp engaging said upper  
flange and said lower flange whereby said  
memory subsystem and said base subsystem are  
removably coupled to each other.

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12. A hardened voyage data recorder according to claim  
11 wherein said quick release V-clamp has two quick  
release levers.

13. A hardened voyage data recorder according to claim  
11 wherein said mounting base subsystem includes at least  
5 one watertight cable connector.
14. A hardened voyage data recorder according to claim  
11, wherein said mounting base subsystem includes a first  
10 watertight cable connector for coupling with a power  
supply and a second cable connector for coupling with a  
data source.
- 15 15. A hardened voyage data recorder according to claim  
11 wherein one of said upper flange and said lower flange  
has a groove adapted to receive an O-ring.
- 20 16. A hardened voyage data recorder according to claim  
11 wherein said upper flange has two concentric grooves,  
each adapted to receive an O-ring.
- 25 17. A hardened voyage data recorder according to claim  
16 further comprising one o-ring and one mesh gasket, one  
disposed in one of said two concentric grooves and the  
other disposed in the other of said two concentric  
grooves.

18. A hardened voyage data recorder, comprising:

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(a) a removable memory subsystem; and

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(b) a mounting base subsystem removably coupled to  
said memory subsystem, wherein said removable  
memory subsystem includes non-volatile memory  
enclosed within a boiler.

19. A hardened voyage data recorder according to claim  
18 wherein said mounting base subsystem includes at least  
15 one watertight cable connector.

20. A hardened voyage data recorder according to claim  
18 wherein said mounting base subsystem includes a first  
20 watertight cable connector for coupling with a power  
supply and a second cable connector for coupling with a  
data source.

21. A hardened voyage data recorder according to claim  
18 further comprising a quick release V-clamp, wherein  
5 said removable memory subsystem has a lower flange, said  
mounting base subsystem has an upper flange, and said  
quick release V-clamp engages said upper flange and said  
lower flange whereby said memory subsystem and said base  
subsystem are removably coupled to each other.

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22. A hardened voyage data recorder according to claim  
21, wherein said quick release V-clamp has two quick  
release levers.

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23. A hardened voyage data recorder according to claim  
21 wherein one of said upper flange and said lower flange  
has a groove adapted to receive an O-ring.

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24. A hardened voyage data recorder according to claim  
21 wherein said upper flange has two concentric grooves,  
each adapted to receive an O-ring.

25. A hardened voyage data recorder according to claim  
24 further comprising one o-ring and one mesh gasket, one  
5 disposed in one of said two concentric grooves and the  
other disposed in the other of said two concentric  
grooves.

10 26. A hardened voyage data recorder, comprising:

- (a) a removable memory subsystem;
- (b) a mounting base subsystem removably coupled to  
15 said memory subsystem; and
- (c) at least one memory interface converter chip  
coupled to said removable memory subsystem.

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27. A hardened voyage data recorder according to claim  
26 wherein said mounting base subsystem includes at least  
one watertight cable connector.

28. A hardened voyage data recorder according to claim  
26 wherein said mounting base subsystem includes a first  
watertight cable connector for coupling with a power  
5 supply and a second cable connector for coupling with a  
data source.

29. A hardened voyage data recorder according to claim  
10 26 further comprising a quick release V-clamp, wherein  
said removable memory subsystem has a lower flange, said  
mounting base subsystem has an upper flange, and said  
quick release V-clamp engages said upper flange and said  
lower flange whereby said memory subsystem and said base  
15 subsystem are removably coupled to each other.

30. A hardened voyage data recorder according to claim  
29 wherein said quick release V-clamp has two quick  
20 release levers.

31. A hardened voyage data recorder according to claim  
29 wherein one of said upper flange and said lower flange  
25 has a groove adapted to receive an O-ring.

32. A hardened voyage data recorder according to claim  
29 wherein said upper flange has two concentric grooves,  
each adapted to receive an O-ring.

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33. A hardened voyage data recorder according to claim  
32 further comprising one o-ring and one mesh gasket, one  
disposed in one of said two concentric grooves and the  
10 other disposed in the other of said two concentric  
grooves.

34. A hardened voyage data recorder, comprising:

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(a) a removable memory subsystem, wherein said  
removable memory subsystem includes a stacked  
memory and a plurality of memory interface  
chips arranged for communication with a  
processor such that a large number of memory  
chips may be driven; and

(b) a mounting base subsystem removably coupled to  
said memory subsystem.

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35. A hardened voyage data recorder according to claim  
34 wherein said mounting base subsystem includes at least  
one watertight cable connector.

36. A hardened voyage data recorder according to claim  
34 wherein said mounting base subsystem includes a first  
5 watertight cable connector for coupling with a power  
supply and a second cable connector for coupling with a  
data source.
- 10 37. A hardened voyage data recorder according to claim  
34 further comprising a quick release V-clamp, wherein  
said removable memory subsystem has a lower flange, said  
mounting base subsystem has an upper flange, and said  
quick release V-clamp engages said upper flange and said  
15 lower flange whereby said memory subsystem and said base  
subsystem are removably coupled to each other.
38. A hardened voyage data recorder according to claim  
20 37 wherein said quick release V-clamp has two quick  
release levers.
- 25 39. A hardened voyage data recorder according to claim  
37 wherein one of said upper flange and said lower flange  
has a groove adapted to receive an O-ring.

40. A hardened voyage data recorder according to claim  
37 wherein said upper flange has two concentric grooves,  
5 each adapted to receive an O-ring.

41. A hardened voyage data recorder according to claim  
40 further comprising one o-ring and one mesh gasket, one  
10 disposed in one of said two concentric grooves and the  
other disposed in the other of said two concentric  
grooves.

42. A process for fabricating a hardened voyage data  
15 recorder, comprising the steps of:

(a) utilizing a removable memory subsystem;

20 (b) removably coupling said memory subsystem to a  
mounting base subsystem; and

25 (c) accessing said memory subsystem electronically  
utilizing electronic circuits, wherein said  
electronic circuits provide an ETHERNET access  
port for coupling said hardened voyage recorder  
to an ETHERNET network.

43. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- (a) utilizing a removable memory subsystem having a lower flange;
- 5 (b) utilizing a mounting base subsystem having an upper flange; and
- 10 (c) removably coupling said memory subsystem and said base subsystem to each other utilizing a quick release V-clamp engaging said upper flange and said lower flange.

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44. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- (a) utilizing a removable memory subsystem; and
- 20 (b) removably coupling a mounting base subsystem to said memory subsystem, wherein said removable memory subsystem includes non-volatile memory enclosed within a boiler.

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45. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- 5           (a) utilizing a removable memory subsystem;
- 10           (b) removably coupling a mounting base subsystem to said memory subsystem; and
- 15           (c) coupling at least one memory interface converter chip to said removable memory subsystem.

46. A process for fabricating a hardened voyage data recorder, comprising the steps of:

- 20           (a) utilizing a memory subsystem including a stacked memory and a plurality of memory interface chips arranged for communication with a processor such that a large number of memory chips may be driven; and
- 25           (b) removably coupling a mounting base subsystem to said memory subsystem.